

USSR

UDC 541.12.034.6.001.5:621.
.791.85

ADLER, Yu. P., and MAMUTOV, Ye. L., Moscow

"The Effect of Vapors on the Melting Depth by Electron-Beam Welding"

Kishinev, Elektronnaya Obrabotka Materialov, No. 3 (39), 1971,
pp 15-18

Abstract : Characteristics of the electron-beam welding method were experimentally investigated on specimens (35x60x100 mm) of the alloy AMr6 by melting them in one operation with an electron-beam according to specially selected systems. A mathematical model of the welding process was established on the basis of the linear part of the Taylor series. The effect of the vapor cloud on the melting depth was determined and analyzed. Recommendations are given for electron-beam welding of articles with grooves and deep slits, the acceleration of the vapor evacuation from the welding zone, and the decrease of the electron-beam energy losses. One illustr., 3 tables, 1 formula, 6 biblio. refs.

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USSR

ADLER, YU. P., et al., Tsvetnaya Metallurgiya, No 5, 1973, pp 135-139

of component N. The additions of Zn, Mn, Co resulted in an increase in the strength. The decrease of Mg from 3.5 to 2.5 increased the relative extension from 8.3 to 11.7%.

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USSR

UDC 669.245.018.44

ADLER, YU. P., DOLZHANSKIY, YU. M., MOLOSTOVA, I. I., and SIVILEVA, L. I.,
Institute for Improving the Qualifications of the Ministry of the Chemical
Industry USSR, All-Union Institute of Aviation Materials

"Statistical Study of the Mechanical Properties in the Al-Zn-Mg-Cu System
Using Projected-Experiment Methods"

Ordzhonikidze, IVUZ, Tsvetnaya Metallurgiya, No 5, 1973, pp 135-139

Abstract: The study related the mechanical properties of the Al-Zn-Mg-Cu system to the composition of the melt, containing the following weight % of metals: Zn, 7.5 and 8.5; Mg, 2.5 and 3.5; Cu, 1.5 and 2.3 and Zr, 0.13%. This resulted in 8 alloys for the first stage. The alloys prepared during the second stage had the following compositions: Zn, 8.0 and 9.5%; Mg, 1.5 and 2.5%; Cu, 1.0 and 2.0%; Zr, 0 and 0.13%; Co, 0 and 0.2%; Mn, 0. and 0.3%; Fe, 0.1 and 0.2%. The mechanical properties measured were the strength (σ_B in kg/mm²) and the relative extension at the rupture point (δ , in %). Sets of equations of the form σ or $\sigma_B = A \pm BX_b \pm CX_c \dots NX_n$ were set up and the coefficients A - N analyzed in matrix form. The X_n is the concentration

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TITLE-- ANNOUNCEMENT OF THE COMMITTEE ON THE LENIN AND STATE PRIZES

NEWSPAPER-- IZVESTIYA, FEBRUARY 18, 1970, P 3, COLS 1-5

ABSTRACT-- THE COMMITTEE ON THE LENIN AND STATE PRIZES HAS ANNOUNCED THE NAMES OF RESEARCHERS ADMITTED TO THE 1970 LENIN PRIZE COMPETITIONS. THE LIST INCLUDES G. V. NOVOZHILOV, YA. A. KUTEPOV, V. I. SMIRNOV, D. V. LESHCHINER, V. M. SHEYNIN, AND A. A. OVCHAROV FOR THEIR "DEVELOPMENT OF THE INTERCONTINENTAL PASSENGER AIRLINER IL-62", AND A. S. YAKOVLEV, YE. G. ADLER, M. G. BENDERSKIY, K. M. VALIK, AND K. S. KILDISHEVA FOR "JET PASSENGER AIRLINER YAK-40 POWERED BY THREE AI-25 ENGINES".

BOTH CANDIDATES WERE NOMINATED BY THE MINISTRY OF AVIATION INDUSTRY.

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Fluid Dynamics

USSR

UDC 532.133

ADKHAMAQOV, A. A., Academician of the Tadzhik Academy of Sciences, Physicotechnical Institute imeni S. U. Umarov, Academy of Sciences of the Tadzhik SSR

"On the Dilatational Viscosity of Liquids"

Dushanbe, Doklady AN TadzhSSR, Vol 14, No 11, 1971, pp 21-23

Abstract: The author considers the processes responsible for dilatational viscosity in a simple liquid: rearrangement of the molecular structure determined by the radial distribution function, and processes of reaching equilibrium Maxwellian velocity distribution. The analysis is based on model kinetic equations derived within the framework of the general statistical theory of liquids. The final expression for the coefficient of dilatational viscosity comprises the sum of two terms corresponding to contributions from translational and structural relaxation. An expression is found also for the coefficient of shear viscosity. The initial kinetic equations can be used also to determine the frequency dependence of elastic moduli and viscosity coefficients. Bibliography of two titles.

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USSR

UDC: 533.72

ADKHAMOV, A. A., Member, Academy of Sciences Tadzhik SSR, ASOYEV, A., and
NASRIDDINOV, M.

"On Kinetic Theory of Transfer Phenomenon in Dense Multiatomic Gas"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 15, No 2, 1972, pp 19-23

Abstract: The kinetic theory of transfer for multiatomic gases applies to low-density gas only. The present work attempts to extend this theory to the case of dense multiatomic gases.

The derivation is based on generalized Boltzman-Enskog equations. It is assumed that the impact between molecules is nonelastic.

The transfer coefficients appearing in two equations are quite complex. By means of some simplifying assumptions they can be reduced to a form which is a modified Eiken correction for dense multiatomic gases.

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USSR

UDC 533.70

LEBEDEV, V. I., and ADIKHANOVA, A. A., Academician of the Academy of Sciences of the Tadzhik SSR

"Green's Functions and Their Spectral Representation for Classical Mixtures"

Dushanbe, Doklady Akademki Nauk Tadzhikskoy SSR, Vol 16, No 3, 1973, pp 29 - 32

Abstract: The successful application of the method of Green's Functions to describing classical systems consisting of particles of a single type makes it interesting to attempt to describe a classical system with a variety of particles by Green's Functions. The authors have obtained spectral representations and a sequence of equations which determine the two-time delay and advance of Green's Functions for systems consisting of a mixture of particles.

As in the single component system, Green's Functions of order S are related to the corresponding Green's Functions of order $S+1$. In order to find approximate solutions for the Green's Functions it is therefore necessary to uncouple the sequence of equations using the theory of perturbations or to approximate higher order Green's Functions by lower order Green's functions with the aid of an analog of Wick's quantum mechanical theorem for the classical case.

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USSR

UDC: 536.764:543.22

ADKHAMOV, A. A., et al, Doklady Akademii Nauk Tadzhikskoy SSR, No 10, 1973, pp 16-19

plotted and are compared with like curves plotted from experimental data. A good agreement between the two is indicated.

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USSR

UDC: 536.764:543.22

ADKHAMOV, A. A., Academician of the Tadzhik Academy of Sciences,
and SALAKHUTDINOV, M. I.

"Phenomenological Theory of Sound Absorption in Liquid Helium Near
the Lambda Point"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, No 10, 1973,
pp 16-19

Abstract: An equation is given for the thermodynamic potential for the asymmetrical phase of helium close to the transition point in terms of η , an ordering parameter. This equation was obtained from the Landau and Lipshits book *Staticheskaya fizika* (Statistical Physics, Moscow, "Nauka," 1964). The anomalous absorption of sound in symmetrically phased helium close to the lambda point is caused by the interaction of the sound wave with fluctuations in η ; the same phenomenon occurs in asymmetrically phased helium in addition to the relaxation of η . The purpose of this paper is to investigate the interaction of the sound and the fluctuations of η theoretically and to study the kinetics of these fluctuations. Equations are obtained for the actual velocity of sound and the absorption factor in both helium phases. Curves for these equations are
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USSR

UDC 541.64.536.4:547.538.141

ADKHAMOV, A. A., Academician of the Academy of Sciences of the Tadzhik SSR,
MUNIOV, T. M., KABILOV, Z. A.

"Variation of the Polymer Durability in an Ultrasonic Field"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol XVI, No 9, 1973, pp 18-20

Abstract: A study was made of the effect of ultrasonic fields on the deterioration kinetics of solids in the loaded state: in particular, polymers. The deterioration of polymers is considered as a kinetic process the basis for which is the thermofluctuation rupture of chemical bonds [V. R. Regel', et al., Uspekhi fizicheskikh nauk, Vol 106, No 2, 193, 1972]. The basic variable characterizing the deterioration process is the durability (τ) of the sample from the loading time to the rupture time. The results from an experimental determination of the effect of an ultrasonic field on this characteristic are depicted graphically as the logarithm of the durability as a function of the applied load with and without the ultrasonic field. Curves are included for the durability of the copolymer SAM in distilled water. All of the experimental points obtained in the presence of the sonic field are below the ones obtained without it. No explanation for this complex phenomenon is offered.

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Fluid Dynamics

USSR

UDC 533.72

ADKHAMOV, A. A., Academician of the Academy of Sciences Tadzhik SSR, and
ASOYEV, A., Physicotechnical Institute imeni S. U. Umarov, Academy of
Sciences Tadzhik SSR

"On the Coefficients of Viscosity and Thermal Conductivity of Dense Gases
With Rotational Degrees of Freedom"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 16, No 1, 1973, pp 19-23

Abstract: The article considers transport phenomena in dense gases consisting of absolutely rough and rigid spherical molecules on the basis of the Boltzmann-Enskog kinetic equation. The molecules of such a gas possess rotational energy which, on collision, can change to translational energy and back. The state of each such molecule is characterized by the values of the velocities of the translational and rotational motions. A generalized momentum method is used to solve the kinetic equation. Expressions are obtained for the coefficients of viscosity and thermal conductivity.

USSR

ADKHAMOV, A. A., and ASOYEV, A., Doklady Akademii Nauk Tadzhikskoy SSR,
Vol 16, No 5, 1973, pp 23-24

$$\gamma'_l = \frac{R}{\epsilon_v} \cdot \frac{P_0}{\omega^2 \tau}, \quad (8)$$

which tends to zero at $\omega \rightarrow \infty$, where ω is the frequency of the external process.

USSR

UDC 533.16+533.72

ADKHAMOV, A. A., Academician of the Academy of Sciences Tadzhik SSR; and
ASOYEV, A., Physicotechnical Institute imeni S. U. Umarov, Academy of
 Sciences Tadzhik SSR

"On the Voluminal Viscosity of Gases With Rotational Degrees of Freedom"

Dushanbe, Doklady Akademii Nauk Tadzhikskoy SSR, Vol 16, No 5, 1973, pp 23-24

Abstract: The coefficient of voluminal viscosity for gases with rotational degrees of freedom for the Bryan-Pidduck model takes the form

$$\eta' = \frac{m}{32\pi} \left(\frac{RT}{\pi} \right)^{1/2} \cdot \frac{(1+k)^2}{32k}, \quad (1)$$

where. $R = \frac{k}{m}$, $k = \frac{4J}{m\sigma^2}$.

However, this expression has one important shortcoming: at $k \rightarrow 0$ the voluminal viscosity tends to infinity. Actually, η' in this limiting case likewise must tend to zero. The purpose of the present article is to obtain a coefficient of voluminal viscosity which is free of this shortcoming. The following coefficient is obtained:

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USSR

UDC 621.383:621.372

ADIROVICH, Z. I., Academician of the Uzbek SSR Academy of Sciences, Physico-technical Institute imeni S. V. Starodubtsev, Uzbek SSR Academy of Sciences, Tashkent

"On the Theory of Electro-Optical Circuits"

Moscow, Doklady Akademii Nauk SSSR, Vol 211, No 2, 11 Jul 73, pp 312-315

Abstract: It is shown that all problems of the analysis and synthesis of circuits comprised of electrical and optical subsystems can be handled by electronic circuit theory supplemented by a theorem for conversion of an electro-optical circuit to an electronic circuit with the introduction of a system of equivalent sources for modeling both internal optical connections and optical inputs to the system. The theorem is proved for the linear case for reasons of simplicity and clarity. A brief outline is presented showing application of the concept of circuit substitution to the general nonlinear case. A future paper will develop the theory in detail and give some applications to nonlinear problems of analysis and synthesis of electro-optical circuits.

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UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136338

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE POSSIBILITY FOR THE PREPN. OF A NEW TYPE OF PHOTOELECTRET WITHOUT THE USE OF AN EXTERNALLY APPLIED FIELD IS CONSIDERED. THESE COULD BE FORMED BY DIRECT ILLUMINATION OF NARROW, GAP, LOW OHMIC SEMICONDUCTORS WITH P N JUNCTIONS, SUCH AS GAAS OR SI. FOR THE CASE OF MULTILAYER STRUCTURES WITH P N AND N P JUNCTIONS WITH DIFFERENT PHOTACTIVITY, THE SOLN. OF THE KINETIC PROBLEM IS PRESENTED BY TAKING INTO ACCOUNT THE DEEP LEVEL TRAPPING OF MINORITY CARRIERS IN THE QUASI NEUTRAL REGION. IF THE MAGNITUDE OF THE QUASI NEUTRAL REGION, w , EXCEEDS THE DIFFUSION LENGTH, L , THE SOLN. IS QUADRATIC. AN APPROX. SOLN. IS GIVEN FOR AN ARBITRARY RATIO $w-L$ WHEN THE LIFETIME OF FREE HOLES IN THE N REGION τ_{SUB1} (OR OF FREE ELECTRONS IN THE P REGION) IS SMALLER THAN THE CAPTURE TIME ON A TRAPPING LEVEL, τ_{SUB2} . THE LOCAL STATES HAVE NO EFFECT ON THE PHOTOVOLTAGE RELAXATION CURVE. THE ANOMALOUSLY HIGH PHOTOVOLTAGE OBSD. EXPTL. IN CDTE FILMS, AND IN SOME OTHER MATERIALS COMPLIES WITH THIS CONDITION. WHEN THE REVERSE CONDITION IS VALID ($\tau_{SUB1}-\tau_{SUB2}$ IS MUCH GREATER THAN 1), A PHOTOELECTRET STATE CAN ARISE WITH A RELAXATION TIME OF THE ORDER OF HR. A PN JUNCTION PHOTOELECTRET IS DEFINED AS A BISTABLE OPTOELECTRONIC DEVICE, CAPABLE OF TRANSMITTING LIGHT OF VARIOUS SPECTRAL COMPNS. IN BOTH DIRECTIONS.

IM STARODUBTSEVA, TASHKENT, USSR.

FACILITY: FIZ. TEKH. INST.

UNCLASSIFIED

1/2 019 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--PHOTOELECTRET STATE IN SEMICONDUCTORS WITH P,N JUNCTIONS -U-
AUTHOR--ADIROVICH, E.I. A
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UNCLASSIFIED

USSR

UDC 539.293:621.382/383

ADIROVICH, E. I., ARONOV, D. A., and YUNUSOV, N., Physicotechnical Institute
Imeni S. V. Starodubtsev, Academy of Sciences Uzbek SSR

"On the Theory of an Optoelectronic Regenerative p-n-p Structure"

Tashkent, Izvestiya Akademii Nauk Uzbekskoy SSR, Seriya Fiziko-Matematicheskikh
Nauk, No 1, 1972, pp 50-57

Abstract: The article develops the theory of a monoblock regenerative optron based on three-layer (p-n-p) transistor structures. A p-n-p structure with a radiative p-n junction as emitter and a photosensitive collector junction is considered. The current-voltage characteristic of such an optron is considered. It is shown that the shape of the current-voltage characteristic (particularly its characteristic points) can be controlled by varying the series resistance of the structure. The IV characteristic can be controlled also by external illumination, the spectral composition of which corresponds to the absorption in the collector junction.

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USSR

UDC 621.382.2

ADIROVICH, E. I., ATABAYEVA, A. N., RUBINOV, V. M., YUABOV, YU. M.

"Silicon as a Material for Dielectric Electronics"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 11, 1971, pp 2052-2057

Abstract: An experimental study was made of the conditions under which dielectric conditions occur in silicon, that is, the current is determined by the electrode emission instead of the carrier concentration in the material itself. The method of two-way diffusion alloying was used to introduce copper from an aluminum melt into plates of high-resistant silicon ($\rho \sim 10^4$ ohms-cm) ~ 100 microns thick. This method insured the possibility of controllable and reproducible production of a thin (~ 10 microns) layer of high-resistant silicon between two p^+ -type regions acting as emitting electrodes. The conditions for a space charge limited emission current were realized in the region of quite low voltages (0.1-10 volts) with variation of the current by 3-4 orders (10^{-5} - 10^{-2} amps).

A series of control experiments is described showing that in $M-p^+-p-p^+-M$ structures manufactured by this method, space charge limited currents actually occur. Effective devices for dielectric electronics can be built on the basis of silicon and other ideal monocrystalline semiconductors with high mobility.

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[illegible]

Article by J. H. Gregory, L.F. Address: Office of Criminal Investigation

ASSEMBLY GOVT. LIBRARY, 2016-2017, RUSSEN, NO 11, 1971, PP 1-11

Saliva of man have not been investigated.

level of their activity.

localization of production of nucleases and other enzymes of saliva.

... on saliva, other biological fluids, and in homogenates of some organs.

USSR

ADIROVICH, E. I., et al, Doklady Akademii Nauk SSSR, Vol 243, No 6, 1 June 1970, pp 764-767

and bands of copper serving as upper electrodes. Film matrices with 144 photodiodes per cm^2 were prepared with an active area of the element 0.25 mm^2 . The density of elements achieved in these laboratory samples is by no means the technological limit. Care was taken to ensure identical parameters of the photodiodes forming the matrix. The minimum light intensity for which the photocurrent of all elements will be identical is approximately 100 lux. A study of volt-ampere characteristics showed that the dependence of current on voltage and temperature for nCdS-pCdTe heterojunctions does not correspond to the diffusion, emission, and recombination models but is in agreement with the tunnel-recombination theory of Riben and Peucht. It is concluded that the direct current through the heterojunction is caused by a tunnel-recombination mechanism, since a quantitative comparison of experiment and theory shows that the passage of carriers through the heterojunction has a multistep character.

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USSR

U.S. 519.275:62.500.01

ADIROMICH, B. I., Academician of the Academy of Sciences USSR;
YUABOV, YU. M., and YATUDAYEV, G. R., Physicotechnical Institute
imeni S. V. Starodubtsev of the Academy of Sciences USSR,
Tashkent

"Thin-Film Photodiode Matrices Based on nCdS-pCdTe Heterojunctions"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 1, 1 June 1973,
pp 76n-767

Abstract: A thin-film photodiode matrix is described. It is based on nCdS-pCdTe heterojunctions, the characteristics of which (open-circuit voltage, short-circuit current, spectral, and frequency) were described previously by the authors (Fiz. i Tekhn. Poluprovodnikov, Vol 3, No 1, 1969, p 81). The use of heterodiodes as light receivers is desirable mainly due to the fact that they have a wide band of spectral sensitivity with an almost constant quantum yield, which is very essential in processing an optical signal. The matrix consists of an nCdS-pCdTe heterostructure with two mutually perpendicular systems of screen electrodes: bands of SrO_2 through which the structure is illuminated

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Immunology

USSR

ADILOV, D. A., AGZAMOV, B. M., and BRAGINSKAYA, G. V., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"The Use of Anthraxin in the Diagnosis of Anthrax"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1971, pp 64-66

Abstract: Immuno-allergic tests for anthrax were performed on 226 individuals by means of intradermal injections of an anthraxin solution and appropriate control tests. The anthraxin reaction was positive in 85 out of 100 patients with anthrax, while bacteriological tests were positive in only 49 of these patients. Of 58 individuals who had had anthrax 2 to 25 years ago, the anthraxin test was positive in 55. Among family members with exposure to anthrax, six out of 68 displayed positive anthraxin reaction, and subsequently collected anamnestic data revealed that all six had had a typical, atypical, or mild form of the disease in the past, without proper diagnosis. It is concluded that the anthraxin tests, which yield correct positive results twice as often as bacteriological tests and are easy to perform, should be applied in cases of suspected anthrax in order to ensure proper treatment and prevent an epidemic.

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USSR

ADILOV, D. A., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"Some Results of the Fight Against Anthrax and the Outlook for Further Lowering the Morbidity in Uzbekistan"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 10, 1972, pp 65-69

Abstract: Before the October Revolution the present territory of Uzbekistan was an endemic area for anthrax in both animals and people, with one of the highest infection rates in Russia. With the work and research of Soviet doctors and veterinarians the situation has changed, especially in the 1960's. The marked decrease in overall incidence is attributed to more hygienic measures and to vaccination programs, especially among high-risk occupational groups. More effective therapeutic measures have also helped decrease human morbidity and mortality. The decline was not always steady, and was greater in animals in the public than in the private sector. The incidence pattern has changed from a pandemic to a sporadic one. There are, however, continuing difficulties in Uzbekistan with organization and implementation of vaccination and inspection programs, especially in the private sector. There also remains the problem of soil reservoirs, which present measures do not attack. This problem deserves more study.

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USSR

ADILOV, D. A. and AZGAMOV, B. M., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"Clinical Picture of Anthrax in Recent Years"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 9, 1972, pp 55-57

Abstract: Study of the case histories of 444 anthrax patients from 1938 to 1970 showed that the course of the skin form of the disease became more benign after 1950. The number of severe cases and the mortality rate declined sharply mainly because of the widespread use of sulfa drugs and antibiotics. Carbuncles appeared more often on the hands than on the face, possibly owing to change in the mode of transmission of the infection. The temperature reaction occurred in about three-fourths of the patients, or at about the same rate as in the past, but its intensity was less and the duration shorter due to early administration of antianthrax globulin combined with antibiotics.

Immunology

USSR

UDC 616.981.51-084.47:615.473.9

BURGASOV, P. N., CHERKASSKIY, B. L., ADILOV, D. A., KNOP, A. G.,
SAVINYKH, A. I., and AGZAMOV, B. M., Central Institute of Epidemiology,
Moscow

"Immunization of Humans Against Anthrax by the Jet-Injection Method"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 6, Aug 73,
pp 23-26

Abstract: Persons 16-25 yrs old were immunized against anthrax with FTL vaccine by the jet-injection method, subcutaneously with a syringe, and by skin scarification. Jet injection was carried out at a pressure of 11 atm by means of a BIP-4 injector. General reactions indicated by fever did not develop on immunization by any of the three methods applied. Local skin reactions were weak; they were exhibited most frequently on immunization by the jet-injection method, less frequently on application of the scarification method, and with the least frequency on immunization by injection with the hypodermic syringe. As indicated by skin allergy tests with anthraxin, the immuno-allergic readjustment of the organism which developed after immunization by the jet-injection method was no less pronounced than that which took place on immunization by the two other methods.

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USSR

ADILOV, D. A. and AGZAMOV, B. M., Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73
pp 19-22

100% of cases in the light, medium, and acute form of the disease, respectively. No relation between the extent of local tissue necrosis and the severity of the disease was evident. Fever developed in 4/5 of the patients. Tachycardia was observed in five patients with the acute form of the disease. The erythrocyte count and hemoglobin level were below normal in 2/3 of the cases. The leukocyte count was above normal in 46.1% of the patients, with its level rising with increasing severity of the disease.

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USSR

ADILOV, D. A., and AGZAMOV, B. M., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"Some Clinical Aspects of Anthrax"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 19-22

Abstract: The clinical aspects of anthrax beginning with a carbuncle on a hand were studied on 103 cases. In 2/3 of the cases the correct diagnosis and hospitalization were unduly delayed for reasons which included initial faulty diagnoses by physicians and failure of patients to seek medical aid early enough. Of the 103 cases, 59 were mild, 38 of medium severity, and 6 acute. While the majority of patients had a single carbuncle, a few of them had two carbuncles (one on each hand), and one patient had four. There was no statistically reliable relation between the number of carbuncles and the severity of the disease. The incubation period on infection was in the range of 1-15 days. It was 1-3 days in 65% of the cases. Formation of a papule and its change into a malignant pustule were more rapid in light cases than in cases of medium severity and acute cases. With increasing severity of the disease, a local edema formed earlier and the final extent of the edema increased. Swelling of the lymph glands (particularly under the arms) was observed in 59.4, 63.3, and 1/2

USSR

CHICHENIN, P. I., Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

incidence of anthrax in the past 20 yrs, one can differentiate between three zones in the Uzbek SSR: I) A zone of stable incidence among humans and animals (Tashkentskaya, Surkhandar'inskaya, and Samarkandskaya Oblasts); II) A zone with periodic outbreaks (Andizhanskaya, Khorzemsкая, and Kashkadar'inskaya Oblasts and the KKASSR); III) The zone with the most satisfactory conditions (Bukharskaya, Syrdar'inskaya, Namanganskaya, and Ferganskaya Oblasts). The ratio of cases of human anthrax to those in the entire Uzbek SSR was 60.33, 35.25, and 2.42% in zone I, II, and III, respectively, and that of anthrax of animals 67.13, 32.02, and 0.85% in zone I, II, and III, respectively. In view of the fact that the infection remains in the soil, prophylactic measures in locations at which anthrax has occurred must be carried out constantly regardless of the time that has elapsed since the last outbreak and these measures reinforced at times at which digging into the ground takes place, e.g., in connection with agricultural irrigation.

USSR

CHICHENIN, P. I., ADILOV, D. A., YUSUPOV, K. Ya., SHARIPOV, M. K., PULATOV, Ya. G., LI GVAN KHVA, V. T., AGZHANOV, K. A., and DENURAYAN, Kh. D., Uzbek Scientific Research Institute of Epidemiology, Microbiology, and Infectious Diseases

"Epidemiological Characteristics of Anthrax in Uzbekistan During Recent Years"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 1, Jan 73, pp 15-19

Abstract: In 1949-60 the incidence of anthrax affecting human beings decreased by a factor of three in the Uzbek SSR from that in 1925-48, mainly as a result of immunization of occupationally exposed persons. In recent years the over-all incidence of anthrax among both humans and animals in the Uzbek SSR was reduced by effective prophylactic measures. However, there is no room for complacency, in view of the fact that there was in 1949-60 and especially in 1961-70 an increase in the relative weight of group infections connected with the uncontrolled utilization of meat and of other animal products after obligatory slaughter of diseased farm animals, particularly in the private sector. During the period under consideration, the frequency of anthrax in the Uzbek SSR passed on that in the USSR by a factor of 3-4, with the number of cases in the USSR, which comprising 10-16% of that in the entire USSR. On the basis of data covering the

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Environmental and Ecological Problems

USSR

UDC 616-796

DOROGOKUPPIYA, A. G., ADIL'GINEYEVA, L. KH., and MYASNIKOV, A. I., Institute of Clinical and Experimental Surgery, Ministry of Public Health, Kazakh SSR

"Effect of Smoke-Contaminated Air on the Podies of White Rats Suffering A-Hypovitaminosis"

Alma-Ata, Izvestiya Akademii Nauk Kazakhskoy SSR, Seriya Biologicheskaya, No 3, May/Jun 72, pp 57-60

Abstract: The relationship between vitamin A deficiency and the effects of chemical carcinogens was studied by subjecting rats to up to 1 year in a smoke chamber. Tissues of 25 rats fed a Sherman diet (vitamin A-deficient) and rats given a complete diet were inspected microscopically and histologically for the presence of 3,4-benzpyrene and for pathological changes. Such changes and accumulation of the carcinogen were noted earlier in vitamin-deficient rats (within 60 days) than in control rats (100 days). Moreover 7 of 25 control rats survived up to 1 year while all vitamin-deficient rats died in 90 days. Though appearing earlier, the pathological changes in vitamin-deficient rats were comparable to those in control rats: Terminal conditions included adenoma and epithelial proliferation in the lungs, hepatitis, uncorrelated squamous cell carcinoma in the esophagus and forestomach, and ulcerous gastritis and epithelial proliferation in the stomach. Thus A-hypovitaminosis facilitates appearance of a cancerous condition in the presence of a carcinogen.

1/1

Automatic Control Instruments & Systems

USSR

A

UDC 622.6-50

LYUBIMOV, E. V., and ADIATULLIN, R. K.

"The Problem of Synthesizing the Structure of An Automatic Control System for A Mine Lift Drive with a Modifiable Program"

Sb. Nauchn. Tr. Permsk. Politekhn. In-T (Collected Scientific Works of Perm' Polytechnical Institute) No 62, pp 21-28, 1969 (translated from Referativnyy Zhurnal Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 2, 1970, Abstract No 2A568, unsigned)

Translation: In the operation of a mine lift it sometimes becomes necessary to modify the automatic control system for the skip hoists, generally fixed as a function of distance travelled. With existing automatic control systems this type of change is difficult and disrupts the proper relationships between the speed, acceleration, and jerk. An automatic control system allowing modification without disruption of the control algorithm is suggested. The system is investigated in a mathematical model. Four illustrations; one bibliography reference.

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USSR

UDC 581.6:615.779.934:547.56

VICHKANOVA, S. A., RUBINCHIK, M. A., ADGINA, V. V., IZOSIMOVA, S. B.,
MAKAROVA, L. V., SHIPULINEA, L. D., and GORYUNOVA, L. V., All-Union
Institute of Medicinal Plants

"Antimicrobial and Antiviral Activity of Some Natural Coumarins"

Leningrad, Rastitel'nyye Resursy, No 3, 1973, pp 370-379

Abstract: The bacteriostatic, fungistatic, and protistostatic activity of 33 natural coumarins of plant origin was investigated by the method of serial dilutions of the compounds in appropriate nutrient media. The microorganisms studied were Staphylococcus aureus, Escherichia coli, Mycobacterium tuberculosis, Microsporum lanosum, Candida albicans, Entamoeba histolytica, and Trichomonas vaginalis. The activity of the coumarins against herpesvirus and influenza APR-8 virus was also investigated. Fourteen of the compounds were active against M. tuberculosis, parasitic protozoans, and gram-negative bacteria. None was effective against any of the viruses. The terpenoid and 3-alkyl-substituted coumarins offer the most promise as bacteriostatic and fungistatic agents.

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USSR

ADERIKHIN, V. P., et al., Otkrytiya, Izobreteniya, Promyshlennyye Obraztsov, Tovarnyye Znaki, No 12, Apr 72, Author's Certificate No 334574, Division G, filed 22 Dec 70, published 30 Mar 72, p 184

connects the output of the scaler in the function servo system to the second input of the logic device, and through a delay line to the controlling inputs of the servo system switches. The memory unit is connected to the output of the logic device.

2/2

- 31 -

USSR

UDC 681.142.644.3

ADERIKHIN, V. P., GOLIKOVA, T. G., KUZ'MICHEV, V. I., LANTSMAN, B. I.,
LESKOV, V. G., RUDAKOV, A. N., and SOBOLEVA, E. I.

"A Device for Calculating a Partial Derivative"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 12, Apr 72, Author's Certificate No 334574, Division G, filed 22 Dec 70,
published 30 Mar 72, p 184

Translation: This Author's Certificate introduces a device for calculating a partial derivative. The device contains a servo system for the independent variable and a servo system for the differentiable function which are based on integrators. The inputs of the integrators are connected through corresponding switches to the outputs of the corresponding scalars. The device also contains a comparator with a reference voltage source connected to one of its inputs. As a distinguishing feature of the patent, computing precision is improved by adding a delay line, logic devices, a memory unit, and an additional switch. The output of the scalar in the independent-variable servo system is connected to the first input of the logic device and to the second input of the comparator. The output of the comparator is connected to the controlling input of the additional switch. This switch

1/2

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--ATO132127
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE TABULATED FOR
FOR REACTION RATED AND RATE CONSTS. IN THE DEHYDROGENATION OF ISOPENTANE
BY IODINE IN THE PRESENCE OF O AT 500DEGREES. IN ALL, 19 REACTION
STEPS WERE REPRESENTED BY APPROPRIATE KINETIC EQUATIONS AND THEIR
THERMODYNAMIC CHARACTERISTICS WERE TABULATED FROM COMPUTER ANAL., USING
EXISTING LITERATURE DATA ON ACCUMULATION OF REACTION PRODUCTS.
CONVERSION DATA ON ISOPRENE AND ISOPENTENE ISOMERS WERE ALSO INCLUDED IN
THE ANAL. A REACTION MECHANISM WAS PROPOSED. FACILITY: MOSK.
INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MECHANISM OF THE DEHYDROGENATION OF ISOPENTANE BY IODINE IN THE
PRESENCE OF OXYGEN -U-
AUTHOR-(05)-ADELSON, S.V., ADELSONVELSKIY, G.M., VEDENEYEV, V.I.,
KATSNELSON, I.G., NIKONOV, ~~W.I.~~ *A*
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(3), 594-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--DEHYDROGENATION, ISOPENTANE, IODINE, OXYGEN, CHEMICAL REACTION
RATE, KINETIC EQUATION, ISOPRENE, CHEMICAL REACTION MECHANISM
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1865 STEP NO--UR/0020/70/192/003/0594/0597
CIRC ACCESSION NO--AT0132127
UNCLASSIFIED

USSR

UDC: 519.2

ADEL'SON-VEL'SKIY, G. M., BEKETOVA, N. V., and CHERNYSHOVA, I. B.

"Realization of a Method for Estimating the Error in the Determination of the Parameters of an Experimentally Specified Function of Many Variables"

Alma-Ata, v. sb. Vopr. obshch. i prikl. fiz. (Problems in General and Applied Physics--collection of works) "Nauka," 1972, pp 63-65 (from RZh--Matematika, 1972, No 6, Abstract No 6V187)

Translation: A description is given of algorithms and formulas of a program for computing a matrix of errors obtained in the determination of deviations from estimates of parameters in the processing of physical and chemical experiments. The most interesting part of the paper is the explanation of an approximation method for determining the matrix of second partial derivatives. Authors' abstract

USSR

ADEL'SON-VEL'SKIY, G. M., et al., Mat. metody v ekon., Vyp. 9, Riga, Zinatne, 1972, pp 33-75

basic types of programs of the information part of the automated control system. The problems connected with automation of programming are also reflected. The bibliography has 21 entries.

2/2

USSR

UDC 8.74

ADEL'SON-VEL'SKIY, G. M., VOROPAYEV, V. I., KALINOVSKAYA, S. S.

"Problems of Software for Automated Control Systems for Water Conservation Construction"

V sb. Mat. metody v ekon. (Mathematical Methods in Economics--collection of works), Vyp. 9, Riga, Zinatne, 1972, pp 33-75 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V478)

Translation: A study was made of some of the principles of constructing the software for automated control systems. It is proposed that the problems of the automated control system be classified with respect to mathematical techniques used for their solution. Primary attention has been given to the statement of the problems of solving the balance equations with respect to unfixed formulas, the problems of optimization solved by the methods of mathematical programming (selection of the orders and their distribution among the contract organizations, optimization of the technological process of the basic types of construction operations, and so on), and the problems of operative (calendar) planning. Some mathematical models are presented in the article which were developed for solving the mentioned problems. The authors present examples of the structural description of the information available in the automated control system on the objects of control, and they also present a description of the

1/2

USSR

ADEL'SON-VEL'SKIY, G. M., Issled. po diskretnoy mat., Moscow, Nauka Press, 1973, pp 105-134

a function $\tau_{ij}(T)$, $\delta_i \leq T(i) \leq \Delta_i$, $T(f) \geq T(i) + \tau_{ij}(T(i)) = D_{ij}(T(i))$. This problem is studied for the case when the functions $D_{ij}(T)$ do not decrease monotonically and are semicontinuous at the bottom. An iterative procedure for determination of the lengths of maximum paths between points on the network is constructed for variable line lengths, early and late times for events are determined and a number of properties of the calendar plan are studied.

2/2

USSR

ADEL'SON-VEL'SKIY, G. M.

"Certain Problems of Network Planning"

Issled. po diskretnoy mat. [Studies in Discrete Mathematics], Moscow, Nauka Press, 1973, pp 105-134 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V554 by I. Sigal)

Translation: The concepts of operations, events, kinds of events used in network planning are presented for an oriented graph without contours with one initial point and one end point under various assumptions concerning the logic of arrival of events (an event arrives either when all operations included in it are completed or when at least one of these operations is concluded, etc.). The directive times of arrival are given for events and the relationship between times of arrival of events is determined. Nontrivial generalizations of the concepts outlined above are suggested, leading to the conclusion that network G may have cycles, and some operations may have negative duration. The problem is stated of construction of a permissible calendar plan for all points on the graph under the condition that each line on the graph (p_i, p_j) G corresponds to

USSR

ADEL'SON-VEL'SKIY, G. M., BERNSHTEYN, I. N. and GERVER, M. L.

"Estimation of the Number of Actions for Partial Determination of Order in a Finite Set of Numbers"

Issled. po Diskretnoy Mat. [Studies in Discrete Mathematics -- Collection of Works], Moscow, Nauka Press, 1973, pp 184-188 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V341)

Translation: The following bottom estimate is produced for the minimum number of comparisons in the most unfavorable case necessary for separation of the k greatest elements of a linearly decreasing set of n elements (and placement of the elements in the order of increasing magnitude):

$$V_k(n) \geq n - k + \log_2 \frac{n!}{(n-k+1)!}$$

Where $k \leq 2$, the estimate is precise.

Abstractor's note. The top estimate for $V_k(n)$, also precise where $k \leq 2$, was found earlier by the abstractor (RZHMAR, 1967, 5V210).

S. Kislitsyn

1/1

USSR

ADEL'SON-VEL'SKIY, G. M., Issled. po diskretnoy mat., "Nauka", 1973, pp 105-134

$\tau_{ij}(T)$, $\delta_i < T(i) < \Delta_i$, $T(j) > T(i) + \tau_{ij}(T(i)) = D_{ij}(T(i))$. This problem is studied for the case where the functions $D_{ij}(T)$ are monotonically nondecreasing and semicontinuous from below. For the case of variable arc lengths an iterative procedure is constructed for determining the lengths of the maximum paths between the vertices of the graph, early and late deadlines of events are defined, and a number of properties of the calendar plan are studied.

USSR

UDC: 51

ADEL'SON-VEL'SKIY, G. M.

"Concerning Some PERT Problems"

Moscow, Issled. po diskretnoy mat.--sbornik (Studies in Discrete Mathematics--collection of works), "Nauka", 1973, pp 105-134 (from RZh-Matematika, No 8, Aug 73, abstract No 8V554 by I. Sigal)

Translation: The author presents the PERT concepts of jobs, events, and event deadlines for an oriented graph without loops with a single initial vertex and a single terminal vertex, with different assumptions on the logic of occurrence of events (an event has occurred when all component jobs have been completed, or when at least one of these jobs has been completed, etc.). For events, the author introduces directive deadlines for their occurrence and defines the relations between deadlines for occurrence of events. Non-trivial generalizations of the above-mentioned concepts and relations are proposed, leading to the fact that a PERT graph G may have cycles, and some of the jobs may have negative durations. The paper raises the question of constructing a permissible calendar plan for all vertices of a graph under the condition that every arc of the graph $(p_i, p_j) \in G$ be assigned a function

1/2

2/2 015

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128549

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CATALYTIC PYROLYSIS AT 760-850DEGREES OF THE 53-125DEGREES FRACTION OF SHEBELINSKII GAS CONDENSATE WAS EXAMD. THE PYROLYSIS FEED HAD 0. 0.743 G-CM PRIME3 AND CONTAINED 40.9 WT. PERCENT PARAFFINS, 51.7 WT. PERCENT NAPHTHENES AND 7.4 WT. PERCENT AROMATICS. THE OPTIMUM FEED-STEAM WT. RATIO WAS 2.2:1. THE MAX. YIELD OF ETHYLENE (36.4 WT. PERCENT) WAS AT 850DEGREES AND SPACE VELOCITY 0.93 HR PRIME NEGATIVE1, AND THE MAX. OF BUTADIENE (8.35PERCENT BY WT.) AT 800DEGREES AND SPACE VELOCITY 2 HR PRIME NEGATIVE1. THE CATALYST COMPN. IS NOT GIVEN. FACILITY: MINKHGP IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--CATALYTIC PYROLYSIS OF A GAS CONDENSATE FROM THE SHEBELIJSKI
DEPOSIT -U-
AUTHOR--(04)-LYSYKH, O.V., PAUSHKIN, YA.M., ADELSON, S.V., PANDVA, I.YU.
COUNTRY OF INFO--USSR
SOURCE--GAZOV. PROM. 1970, 15(3), 44-7 (RUSS) A
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY
TOPIC TAGS--PYROLYSIS, ALKANE, NAPHTHENE, ETHYLENE, BUTADIENE, CATALYST,
NATURAL GAS, PETROCHEMISTRY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1122 STEP NO--UR/0492/70/015/003/0044/0047
CIRC ACCESSION NO--AP0128549
UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AT0132127
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC DATA WERE TABULATED FOR
FOR REACTION RATED AND RATE CONSTS. IN THE DEHYDROGENATION OF ISOPENTANE
BY IODINE IN THE PRESENCE OF O AT 500DEGREES. IN ALL, 19 REACTION
STEPS WERE REPRESENTED BY APPROPRIATE KINETIC EQUATIONS AND THEIR
THERMODYNAMIC CHARACTERISTICS WERE TABULATED FROM COMPUTER ANAL., USING
EXISTING LITERATURE DATA ON ACCUMULATION OF REACTION PRODUCTS.
CONVERSION DATA ON ISOPRENE AND ISOPENTENE ISOMERS WERE ALSO INCLUDED IN
THE ANAL. A REACTION MECHANISM WAS PROPOSED. FACILITY: MOSK.
INST. NEFTEKHIM. GAZOV. PROM. IM. GUBKINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--MECHANISM OF THE DEHYDROGENATION OF ISOPENTANE BY IODINE IN THE
PRESENCE OF OXYGEN -U-
AUTHOR--(05)-ADELSON, S.V., ADELSONVELSKIY, G.M., VEDENEYEV, V.I.,
KATSNELSON, I.G., NIKONOV, V.I.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 192(3), 594-7

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DEHYDROGENATION, ISOPENTANE, IODINE, OXYGEN, CHEMICAL REACTION
RATE, KINETIC EQUATION, ISOPRENE, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3004/1865

STEP NO--UR/0020/70/192/003/0594/0597

CIRC ACCESSION NO--AT0132127
UNCLASSIFIED

Acc. Nr:

AP0049796

Abstracting Service:

CHEMICAL ABST. 5/70 A

Ref. Code:

UR0065

99909z Dehydrogenation of isopentenes by iodine. Adel'son, S. V.; Nikonova, M. M.; Nikonov, V. I. (MINKh GP im. Gubkina, Moscow, USSR). *Khim. Tekhnol. Topl. Masel* 1970, 15(1), 8-12 (Russ). The oxidative dehydrogenation (Raley, J. H.; Mullineaux, R. D.; Bittner, C. W. J., 1963) of a fraction, contg. butenes 0.57, n -C₅H₁₂ 3.31, n -isopentenes 9.90, iso-C₅H₁₂ 5.15, isopentenes 80.0, and isoprene (I) 1.07 vol. % in a quartz reactor packed with Na₂O/Al₂O₃ acceptor, yielded 75.5 and 94.2 wt. % I at mol. ratio 0.05:1.0:12.4:1.0 iodine-O-water-isopentenes, resp., at 520° and contact time 1.3 sec. The velocity of the dehydrogenation of isopentenes with iodine was higher than that of iso-C₅H₁₂. The products of the deep oxidn. and decompn. during the dehydrogenation of iso-C₅H₁₂ were mainly obtained on account of the secondary reactions of the raw material and in an insignificant amt. only from isopentenes as intermediate products. The effect of the diln. of the raw material with steam, comparative results of the dehydrogenation of isopentenes, and the dehydrogenation conditions are tabulated. The effect of the amt. of O, diln., contact time, and temp. are graphically presented. GGJR

REEL/FRAME
19801718

AP0049426

and red-hardness (for hardness HRC 60) 625-635°, i.e., values which are usually obtained for highly alloyed V-steels R9F5 and R14F4 with poorer grinding qualities. In steels with higher C, absence of ferrite, after heating to temps. above the pearlite transformation region, provides better dissoln. of carbides. In these steels pptn. of carbides during tempering takes place in a narrower temp. interval, hence the carbides are more dispersed and homogeneous in compn. and size, than in steels with lower C content. Increased C content to 1.0-1.05% is advisable for W-Mo steels, and partly also for R6M5 steel, particularly when they are used instead of highly alloyed V steels, because of their better mech. properties and grinding ability. Jiri Becvar

pc

42

19801263

Acc. Nr.

AP0049426

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code

4R 0129

102895z Optimum carbon content in high-speed steels.

Kremnev, L. S.; Addaskin, A. M.; Geller, Yu. A. (Mosk. Stankoinstrum. Inst., Moscow, USSR). *Metalloved. Term. Obrab. Metal.* 1970, (1), 25-31 (Russ). The effect was investigated of C content on properties and transformations of W and W-Mo steels. Steel compns. were: steel R18 W 17.0-17.9, Cr 4.1-4.3, V 1.1-1.2, and C 0.65-1.04%; steel R 12 W 11.6-12.6, Cr 3.5-3.6, V 1.55-1.7, and C 0.77-1.30%; steel R 12F3 W 12.0-13.0, Cr 3.8-4.0, V 2.6-2.7, and C 0.97-1.45%; steel R6M3 W 6.2-6.4, Mo 3.2-3.6, Cr 3.0-3.5, V 2.1-2.2, and C 0.95-1.13%, and steel R6M5 W 5.8-6.3, Mo 5.2, Cr 4.2-4.4, V 2.0-2.1, and C 0.75-1.09%. Secondary hardness and red-hardness of high speed steels increases up to a detd. near quasi-eutectic C concn., higher than in std. steels. Further increasing of C lowers max. hardness as well as red-hardness. Max. hardness and red-hardness were obsd. with R18 and R12 steels contg. ~1% C, for R12F3 steel contg. 1.15% C, and for W-Mo steels contg. 1.05-1.10%. In this case hardness attains HRC 65.5-67,

1/2

REEL/FAME
19801262

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ADBINOV, O. B.

ADBINOV, O. B.

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Date: 24 FEB 1972

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This document is considered pertinent to your interests.

Title: Intramolecular Cascades in Light Nuclei.

Author: O.B. Adbinov; V.S. Parashnikov

Prepared by: AEC

Country: USSR

Date of Document: 1972

Classification: UNCLASSIFIED

CIA Control Number AEC/CRS / 72-0563-72

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2/2 018

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AA0115771

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTROLYTIC CELL FOR THE PRODUCTION OF METALLIC NA BY THE ELECTROLYSIS OF A FUSED SALT BATH CONTG. NA₂CL COMPRISES A CENTRAL CYLINDRICAL ANODE BUILT UP OF GRAPHITE BARS, PROVIDED WITH WATER COOLING, AND SEALED IN THE BASE OF A STEEL SHELL, LINED WITH FIRE BRICK, WHICH CONTAINS THE MOLTEN SALT BATH. THE ANODE IS ENCIRCLED BY A CAST STEEL CATHODE SEPD. FROM THE ANODE BY AN FE OR ALLOY MESH SCREEN SUSPENDED FROM A COLLECTOR OR DOME TO PREVENT RECOMBINATION OF THE NA AND CL SUB2. THE NA EVOLVED AT THE CATHODE RISES INTO THE OUTER RING OF THE DOME AND THENCE TO A COLLECTOR, WHILE THE CL SUB2 GAS RISES THROUGH THE CENTRAL DOME TO A GAS COLLECTING SYSTEM.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ELECTROLYTIC CELL FOR THE ELECTROLYSIS OF A MOLTEN ELECTROLYTE -

AUTHOR-(05)-~~ACA~~^YEV, E.I., BLINOV, A.V., KAPANYAN, G.M., NOVOSELOV, V.A.,
SUCHKOV, V.N.
COUNTRY OF INFO--USSR

SOURCE--BRIT. 1,185,481

DATE PUBLISHED--25MAR70

SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--SODIUM, ELECTROLYSIS, SODIUM CHLORIDE, ELECTROLYTE, CHLORINE,
PATENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1972

STEP NO--UK/0000/70/000/000/0000/0000

CIRC ACCESSION NO--AA0115771

UNCLASSIFIED

USSR

UDC 681.3

ADAVICH, P. N., MEYTIL'SH, A. L., SHPILETZKAYA, Z. V.

"Mathematical Model of Binary Channels Considering Actual Statistics of Distribution of Failures"

Metody. I Sredstva Tekhn. Kibernet., [Methods and Equipment of Technical Cybernetics--Collection of Works], No 10, Riga, 1970, pp 31-41, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V599).

No Abstract.

1/1

USSR

UDC 51:155.001.57:681.3.06

ADAVICH, P. N., BORISOV, A. N., GOLENDER, V. Ye.

"Adaptive Algorithm for Recognition of Eroded Classes"

Kibernetika i Diagnostika [Cybernetics and Diagnosis -- Collection of Works], No 4, Riga, Zinatne Press, 1970, pp 149-156 (Translated from Referativnyy Zhurnal Kibernetika, No 3, 1971, Abstract No 3 V584 by the authors).

Translation: The problem of recognition of patterns in eroded sets consists in restoring the dividing hypersurface on the basis of learning sequences containing the objects and their membership functions to each pattern. An adaptive algorithm for recognition of eroded patterns is presented, consisting of a modification of the known learning algorithm with correction of errors. Results are presented from a comparative study of the ordinary algorithm and its eroded analogue for a model problem and the problem of distinction of manuscript letters.

1/1

USSR

UDC: 669.14:669.112.227.34:546.26:548.73

KREMNEV, L. S., ADASKIN, A. M., BOGOLYUBOV, A. V., Moscow Machine-tool Institute

"Determination of Concentration of Carbon in the Martensite of Steels Using the Asymmetry of Reflection Lines"

Moscow, Zavodskaya Laboratoriya, No. 9, 1971, pp 1086-1090

Abstract: A method has been developed for determining the concentration of carbon in the martensite of alloy steels, based on the dependence of the asymmetry of reflection lines on the spacing between doublets. The profile of the martensite line was approximated by analytic functions. The difference in the areas of the reflection lines located to the left and right of the ordinate of the center of gravity of the line is used to calculate the parameters of the component doublets and the shift between doublets. A theorem is proven, stating that in the case of coincidence of the sums of the ordinates of the doublets with the ordinates of an experimental profile of the reflection line, the expansion is unique. Dependences are produced for determination of the error in expansion and conditions of applicability of the method.

1/1

USSR

UDC 632.937.3

ADASHKEVICH, B. P., and KUZIN, A. A., Moldavian Scientific Research Institute
of Irrigation Farming and Vegetable Growing

"Resistance of Common Chrysopa to Pesticides"

Moscow, Khimiya v Sel'skom Khozyaystve, Vol 9, No 6, 1971, pp 23-24

Abstract: Previous studies showed that Chrysopa is relatively resistant to a number of pesticides in the larval stage. The present article shows that Chrysopa is relatively resistant to Cyphos, Kil'val' [transliterated from the Russian], Amiphos, Phosalone and anabasine sulfate in all developmental phases. Chrysopa is least subject to the destructive action of pesticides in the egg and third instar larva phase. Pesticide resistance increases with the instar of the larvae. The relative pesticide resistance of Chrysopa offers great opportunities to combine the chemical and biological method of controlling harmful insects.

1/1

2/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0123686
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLUXING 7 G I WITH 14 G BZONA IN
REFLUXING ME SUB2 NCHO 20 HR GAVE 1.78 G ME
6,DEOXY,2,3,0,ISOPROPYLIDENE,ALPHA,L,TALO FURANOSIDE BENZOATE, M.
95DEGREES, (ALPHA) PRIME20 SUBD MINUS 36DEGREES. THIS WITH MEONA-MEDH
GAVE 50PERCENT FREE FURANOSIDE, (ALPHA) SUBD MINUS 51DEGREES, WHICH WITH
(PHO) SUB3 PMEL IN C SUB6 H SUB6 HEATED 8 HR AT 70DEGREES GAVE
54.5PERCENT ME
5,6,DIDEOXY,5,1000,2,3,0,ISOPROPYLIDENE,BETA,D,ALLOFURANOSIDE, M.
57-80DEGREES, (ALPHA) PRIME20 SUBD MINUS 70.8DEGREES. NMR SPECTRAL DATA
ARE GIVEN. FACILITY: INST. ORG. KHM. IM. ZELINSKOGO, MOSCOW,
USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SYNTHESIS OF METHYL
5,6,DIDEOXY,5,1000,2,3,0,ISOPROPYLIDENE,BETA,D,ALLOFURANOSIDE -U-
AUTHOR-(03)-ADAMYANTS, K.S., USOV, A.I., KOCHETKOV, N.K.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 696-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, IODINATED ORGANIC COMPOUND, FURAN,
HETEROCYCLIC OXYGEN COMPOUND, NMR SPECTRUM, MOLECULAR STRUCTURE,
GLUCOSIDE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1902 STEP NO--UR/0062/70/000/003/0696/0697
CIRC ACCESSION NO--AP0123686
UNCLASSIFIED

USSR

UDC 621.382.27

AVAK'YANTS, G. M., Acad. Sci. Armenian SSR, ADAMYAN, Z. N., ARUTCHINYAN, V. M., BARSEGYAN, R. S. and OGANESYAN, S. V.

"Some Studies of Zinc-Doped Silicon Diodes as Optron-Pair Elements"

Yerevan, Doklady Akademii Nauk Armyanskoy SSR, Vol 57, No 3, 1975, pp 152-157

Abstract: This article describes an investigation of the light-sensitivity of the time characteristics of the diode structures described in the title in order to determine the possibility of using them as photoreceptors in optron pairs. The volt-ampere characteristics were measured in a couple with a light-emitting diode over a broad range of temperatures. The diodes retained their light sensitivity throughout the entire range of temperatures, from -196° to $+80^{\circ}$ C. In contrast to many other devices, these diodes can be switched both from the low-conductivity to the high-conductivity state and from the high-conductivity to the low-conductivity state simply by changing the level of illumination.

1/1

USSR

UDC 517.4

ADAMYAN, V. M., AROV, D. Z., and KREYN, M. G.

"Analytic Properties of Schmidt Pairs of Hankel Operators and the Generalized Schur-Takagi Problem"

Moscow, Matematicheskiiy Sbornik, Novaya Seriya, Vol 86(128), No 1(9), Sep71, pp 34-75

Abstract: Infinite Hankel Matrices and associated approximal problems are examined. Suppose $\Gamma = (\gamma_{j+k-1})_{j,k=1}^{\infty}$ is a Hankel matrix bounded in ℓ_2 . The sections of the article are as follows: 0. Formulation of the problem; principal results. 1. Infinite Hankel matrices and displacement operator in ℓ_2 . 2. Canonical solutions of the generalized Schur-Takagi problem; completion of proofs of theorem 0.1 and 0.2. 3. Description of all solutions of the generalized Schur problem in the case $\rho > \|\Gamma\|$. 4. Generalized Rouché's Theorem. 5. Description of all solutions of the problem $C^{[K]}$ when $K > 0$. 6. Classical interpolational problems. 7 Continuum analog.

1/1

USSR

ADAMYAN, V. M., et al., Izvestiya Akademii Nauk Armyanskoy SSP, Matematika, Vol 6, No 2-3, 1971, pp 87-112

coefficients $c_{-j}(F) = \delta_j$ ($j \geq 1$) and with $\|F\|_{\infty} < \rho$. Explicit formulas are given to describe all such functions of F when $\rho > \|r\|$ and $\dim N_k < \infty$ ($k = 1, 2$). The authors divide the article into six sections, each of which is discussed in detail with proofs given. The article contains 17 bibliographic entries.

USSR

ADAMYAN, V. M., AROV, D. Z., and KREYN, M. G.

"Infinite Hankel Block-Matrices and Related Continuation Problems"

Yerevan, Izvestiya Akademii Nauk Armyanskoy SSR, Matematika, Vol 6, No 2-3, 1971, pp 87-112

Abstract: The authors study a bounded, infinite Hankel block-matrix

$\Gamma = (\mathcal{X}_{j+k-1})_{j,k=1}^{\infty}$, the \mathcal{X}_j blocks being bounded linear operators from the Hilbert space N_1 to the Hilbert space N_2 ($\mathcal{X}_j \in [N_1, N_2]$, $j = 1, 2, \dots$). They term the matrix $\tilde{\Gamma} = (\tilde{\mathcal{X}}_{j+k-1})_{j,k=1}^{\infty}$ a full (Γ, ρ) -continuation if $\tilde{\mathcal{X}}_j = \mathcal{X}_j$ for $j = 1, 2, \dots$ and $\|\tilde{\Gamma}\| \leq \rho$. The set of these continuations is not empty if $\rho \geq \|\Gamma\|$

and becomes infinite if $\rho > \|\Gamma\|$. A special "one-step (Γ, ρ) -continuation" algorithm permits constructing each continuation of the set. The uniqueness theorem is established for the case $\rho = \|\Gamma\|$. The work was motivated by the related problem of finding an essentially bounded operator-valued function $F(\zeta) = F(\zeta) \in [N_1, N_2]$ on the circle $|\zeta| = 1$ with certain negative Fourier $1/2$

USSR

UDC: 517.948

ADAMYAN, V. M., et al, Doklady Akademii nauk Armyskoy SSR, vol
61, No 2, 1973, pp 71-78

complex parameter.

2/2

USSR

USSR

Differential & Integral Equations UDC 517.948

ADAMYAN, V. M. and YAVORSKIY, M. T."The Theory of Systems of Canonical Differential Equations on the Semi-Axis"Yerevan, Doklady Akademii Nauk Armyanskoy SSR, vol 61, No 2, 1973, pp 71-78

Abstract: The purpose of this paper is to clarify some aspects in the spectral theory of the differential operator D_n specified by $(D_n f)(x) = -H^{-1}(x)Jf'(x)$ for a set of smoothly and rapidly decreasing vector functions, of $(2n \times 1)$ matrices, on the $(0, \infty)$ semi-axis, such that $P_0 J f(0) = 0$, where J is a matrix of order $2n$ and $P_0 J P_0 = 0$. Some of the characteristics of the fundamental vector functions of D_n are given, a theorem is stated for its expansion in terms of the characteristic vector functions, and a group of unitary operators in $L_2^{(2n)}(0, \infty; H)$ Hilbert space generated by D_n is considered. The differential system

$$-J \frac{d}{dx} Y(x, \lambda) = H(x) Y(x, \lambda)$$

is also examined. Here, $Y(x, \lambda)$ is a matrix function, λ being a $1/2$

Acc. Nr:

AA0108725

ADAMYAN R.G.

Ref. Code:

UR 0482

Abstracting Service:

Soviet Inventions Illustrated, Section 1 Chemical, Derwent. 3/70

242991 MACHINE FOR FIXING SEPARATING MATERIAL TO
ELECTRODES of chemical cells has each welding
 unit in the machine fitted with an electrical cutter
 at the sides of which are spring-loaded catches which
 press the separating material (in tape form) to the
 edges of a longitudinal slot -in a supporting plate.
 The feed-in mechanism for the separation material
 takes the form of a shaped template for tensioning the
 welded butt joint of two strips of separation material.
 In slots of this template operate, with reciprocating
 action, the shaped clamps of the transporter which
 transfers the electrodes and separation material to
 the welding unit. 15.3.68. as 1225550/24-7.
 RUVINSKIY, L.G. KREININ, M.N. POLYANIN, V. Ya. et al
 (25.9.69) Bul. 16/5.5.69. Class 21b, Int. Cl. H 01m.)

AUTHORS: Ruvinskiy, L. G.; Kreynin, M. N.; Polyanin, V. Ya.;
Adamyman, R. G.; Manukhin, S. V.; Gurushkin, V. V.

//

REEL/FRAME

18

25

19900504

USSR

UDC 621.351.035.2(088.8)

KREYNIN, M. N., RUVINSKIY, L. G., ADAMYAN, R. G.

"Device for Manufacture of Electrodes of Chemical Current Sources"

USSR Author's Certificate No 298975, Filed 18/12/69, Published 3/05/71,
(Translated from Referativnyy Zhurnal, Khimiya, No 3, 1972, Abstract No
3 L248 P by V. S. Levinson).

Translation: As a supplement to USSR Author's Certificate No 204404 (see
RZhKhim, 1970, 23L231), tableting and pressing units, devices for the manu-
facture of electrodes are equipped with nonmoving rollers installed on
sliders, connected by rubber compensators, while rubber balloons filled with
oil under pressure are placed in the end cavities of the nuts. This in-
creases the productivity and improves the reliability of the device.

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0126571

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. BOULEN'S TEST IN 120 PERSONS WAS INVESTIGATED. THE LARGE COINCIDENCE OF THE RESULTS IN PATIENTS WITH CANCER AND HEALTHY PERSONS IN CONJUNCTION WITH THE TECHNICAL SIMPLICITY GIVES GROUNDS TO RECOMMEND BOULEN'S TEST AS AN ADDITIONAL ONE IN OBSCURE PERIPHERAL FORMATIONS IN THE LUNG, AS WELL AS IN DISPENSARY EXAMINATION FOR THE PURPOSE OF DETECTING ASYMPTOMATIC PERIPHERAL CANCER OF THE LUNG.

FACILITY: KLINIKO-DIAGNOSTICHESKAYA LABORATORIYA.

FACILITY: II KHIRURGICHESKOYE OTDELENIYE.

FACILITY: INSTITUTA

KHIRURGII IM. A. V. VISHNEVSKOGO, AMN SSSR, MOSKVA.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--THE IMPORTANCE OF BOULEN'S DROP IN THE DIAGNOSIS OF LUNG CANCER -U-
AUTHOR-(03)-SERGEL, O.S., ADAMYAN, A.A., KACHKOV, A.P.
COUNTRY OF INFO--USSR
SOURCE--EKSPERIMENTAL'NAYA KHIRURGIYA I ANESTEZIOLOGIYA, 1970, NR 3, PP
12-15
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--LUNG, CANCER, DIAGNOSTIC MEDICINE

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0912 STEP NO--UR/0481/70/000/003/0012/0015
CIRC ACCESSION NO--AP0126571
UNCLASSIFIED

USSR

A UDC 614.37:632.95(476)

ADAMOVICH, YE. L., BUSLOVICH, S. YU., VYATCHANNIKOV, K. A., and
PAROMCHIK, YE. I., Belorussian Scientific Research Sanitary-Hygienic
Institute

"Laboratory Control of the Use of Toxic Chemicals and Methods of
Improving This Control in Belorussia"

Moscow, Gigyena i Sanitariya, No 1, 1970, pp 100-101

Abstract: The content of toxic chemicals in food products has been steadily increasing since 1964. The presence of such residues in amounts above maximum permissible limits is due to violation of the regulations governing the use of compounds. Since only a small number of food products can be analyzed, the laboratories try to monitor the times and conditions of application of the chemicals. Introduction of a system of certification of finished food products is proposed. The food products would be labeled, showing the names of the chemicals used in growing them, dates and methods of application. Inspection agencies would check on compliance with the certification procedure, while the laboratories would make spot checks when the data on the certificates suggested a possible violation of the rules for proper use of pesticides, herbicides, etc.

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2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140498

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONTENT OF TOXIC CHEMICALS IN FOOD PRODUCTS HAS BEEN STEADILY INCREASING SINCE 1964. THE PRESENCE OF SUCH RESIDUES IN AMOUNTS ABOVE MAXIMUM PERMISSIBLE LIMITS IS DUE TO VIOLATION OF THE REGULATIONS GOVERNING THE USE OF COMPOUNDS. SINCE ONLY A SMALL NUMBER OF FOOD PRODUCTS CAN BE ANALYZED, THE LABORATORIES TRY TO MONITOR THE TIMES AND CONDITIONS OF APPLICATION OF THE CHEMICALS. INTRODUCTION OF A SYSTEM OF CERTIFICATION OF FINISHED FOOD PRODUCTS IS PROPOSED. THE FOOD PRODUCTS WOULD BE LABELED, SHOWING THE NAMES OF THE CHEMICALS USED IN GROWING THEM, DATES AND METHODS OF APPLICATION. INSPECTION AGENCIES WOULD CHECK ON COMPLIANCE WITH THE CERTIFICATION PROCEDURE, WHILE THE LABORATORIES WOULD MAKE SPOT CHECKS WHEN THE DATA ON THE CERTIFICATES SUGGESTED A POSSIBLE VIOLATION OF THE RULES FOR PROPER USE OF PESTICIDES, HERBICIDES, ETC. FACILITY:
BELORUSSIAN SCIENTIFIC RESEARCH SANITARY HYGIENIC INSTITUTE.

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0126163
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CARTOGRAPHIC METHODS WERE APPLIED TO STUDIES OF THE TERRAIN IN BRYANSK REGION (THE MEETING POINTS OF THE MIDDLE RUSSIAN HEIGHTS AND THE LOWLANDS OF POLESIE). AS REVEALED, THE QUANTITATIVE DISTRIBUTION OF ANTHRAX FOCI (A TOTAL OF 643 EPIZOOTOLOGIC CENTRES WERE REGISTERED SINCE 1884) DEPENDED ON THE INTENSITY OF EROSION OF THE TERRITORY. GREY FOREST AND SODDY PODZOLIC LOAMY SOILS ARE EQUALLY FAVOURABLE FOR ANTHRAX. THE GREATEST ACTIVATION OF ANTHRAX FOCI WAS NOTED FROM 1944 TO 1962: THERE AROSE 355 NEW FOCI DURING THAT PERIOD WHICH CHIEFLY LOCALIZED IN THE REGIONS OF EROSION TERRAIN IRRESPECTIVE OF THE TYPE OF THE SOIL AND ITS MECHANICAL COMPOSITION.
FACILITY: BRYANSKIY OTDEL GEOGRAFICHESKOGO OBSHCHESTVA SSSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--THE SIGNIFICANCE OF TERRAIN ECOLOGICAL FACTORS IN THE EPIZOOTIOLOGY
OF ANTHRAX, EROSION FACTOR -U-
AUTHOR-(02)-ADAMOVICH, V.L., NIKONOV, N.N. A

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 6,
PP 73-79
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ANTHRAX, EPIZOOTIOLOGY, GEOGRAPHIC LOCATION, CARTOGRAPHY, SOIL
STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/0410

STEP NO--UR/0016/70/000/006/0073/0079

CIRC ACCESSION NO--AP0126163

UNCLASSIFIED

USSR

ADAMOVICH, V. L., et al, V sb. Kompleksn. probl. Desny (Complex Problems of the Desna -- collection of Works), Tula, 1970, pp 196-202 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.122 by V. Maslovskaya)

groves. Cartographic data shows that tularemia foci in 1963 were associated with areas of land reclamation. These conditions are causing Ixodes ticks and rodents to inhabit the shores of drainage canals. Microfoci emerge, from which infection spreads into the flood plain with subsequent increased incidence of tularemia in the population. The morbidity probability has increased for tularemia, hemorrhagic fever with a renal syndrome, Q fever, and other diseases.

USSR

UDC 911.3.616.981.455(470.333)

ADAMOVICH, V. L., STRUTINSKIY, V. M., and DOZORTSEVA, A. A.

"Elimination of Tularemia in the Desna Flood Plain in Relation to the River Irrigation Project"

V sb. Kompleksn. probl. Desny (Complex Problems of the Desna -- collection of works), Tula, 1970, pp 196-202 (from RZh-36. Meditsinskaya geografiya, No 1, Jan 71, Abstract No 1.36.122 by V. Maslovskaya)

Translation: From 1948 to 1963 there were 1,417 recorded cases of tularemia in Bryanskaya Oblast, and morbidity was gradually increasing. The high incidence in 1963 can be explained by the abrupt intensification of the epizootic process in tularemia foci and the absence of appropriate vaccination for the population. After 1963 the morbidity sharply decreased: in 1964 -- 7 cases (in the environs of Bransk); in 1965 -- 2; and in 1966 -- 12 cases (in the Desna flood plain). In the Desna flood plain there are two dangerous epidemiological areas: from the mouth of the Bolva river to Pil'shino village and from Radutino to Belaya Berezka village. Tularemia study in Bryanskaya Oblast showed that elementary foci of infection are associated with the distribution of Ixodes apronophorus ticks and are found in alder

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USSR

ADAMOVICH, V. L., et al, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
No 8, Aug 70, pp 113-117

are completely noninfectious. However, when the infected nymphs are fed on
immune blood, 50% of them still remain infectious and transmit the virus to the
imago phase. These factors constitute partial limitation of the infinite spread
of the virus.

USSR

UDC 616.981.51-036.21-022.39-07:551.4

ADAMOVICH, V. L., and NIKONOV, N. N., Bryansk Division, Geographical Society of the USSR

"Significance of Landscape and Ecological Factors in the Epizootiology of Anthrax. II. Comparative Method of Evaluating the Epizootic Intensity of an Area"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 8, Aug 70, pp 113-117

Abstract: Landscape and ecological features of anthrax foci in the western and eastern parts of Branskaya Oblast (southwest USSR) were examined, with particular reference to the principal soil types, humus content, soil pH, and frequency of epizootics. The main reservoirs of anthrax are found on the floodplains of small rivers and low peat bogs. The neutral reaction of the latter is favorable to the multiplication and retention of Bac, anthracis in the soil. New, largely man-made anthrax foci on acid soddy-podzolic clay loam, sandy, and sandy loam soils are the result of bringing peat from anthrax reservoirs to livestock farms and applying it to the fields, especially those with sandy soils. Activation of old anthrax foci and the creation of new foci is thus largely the result of human activity. This fact should be taken into account in any evaluation of the epizootic situation in an area, together with the physicochemical characteristics of the soils, biotic factors, and the extent of erosion.

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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R002065900040-6
epizootic situation in an area, together with the physicochemical characteristics
of the soils, biotic factors, and the extent of erosion.
1/1

Epidemiology

USSR

UDC 619.616.981.51-036.21:551.4

ADAMOVICH, V. L., and NIKONOV, N. N. Bryansk Branch Geographical Society USSR

"The Significance of Landscape Ecological Factors in the Epizootiology of Anthrax.
Report I. The Erosion Factor"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol 47, No 6, June 70,
pp 73-79

Abstract: Cartographic methods were used to analyze the distribution of cases of anthrax according to soil regions in Bryanskaya oblast. It was found that the quantitative distribution of foci of the disease is not related to the type or structural composition of the soil; rather, it depends on the intensiveness of breakdown of the terrain by erosion. The more eroded the terrain, the more numerous the foci of disease. Grey forest and soddy-podzolic, loamy soils are equally favorable for the development of anthrax. The highest increase in the incidence of anthrax foci was observed from 1944 through 1962.

Entomology

USSR

UDC 595.751(476.2)

ADAMOVICH, V. L., Bryanskaya Oblast Sanitary Epidemiological Station

"Lice (Anoplura) of Small Animals from Natural Tularemia Foci in Volgnskoye Poles'ye"

Leningrad, Entomologicheskoye Obozreniye, Vol 40, No 3, 1970, pp 573-577

Abstract: Lice are considered possible carriers of tularemia. In Volgnskoye Poles'ye, lice are at least as numerous as Ixodes ticks. Therefore, it was of interest to investigate their seasonal activity, especially in wooded areas. It was determined that among the family Haplopleuridae, the species *H. acanthopus* is most numerous, representing 97.6% of the population. A possible function of *H. acanthopus* in tularemia infection centers around the summer months -- July and August -- at the time when water rats, root voles and bank voles living in humid or wooded sections are most infected by lice. The field mice are infested primarily in the winter-spring period, when they live in haystacks. Different periods of seasonal activity of *H. acanthopus* suggest that there may be two populations: a forest population for which various forest animals and water rats are hosts, and a field population, with the field mouse as carrier.

USSR

ADAMOVICH, V. L., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii,
Vol 48, No 4, Apr 71, pp 31-36

develop for epidemic outbreaks of tularemia in the floodplain. Human infection in the floodplain lands was found to occur even when the population of *Arvicola terrestris* was low. At the site of local outbreaks of tularemia in the floodplains, *P. tularensis* was isolated from *Aedes cinereus* mosquitoes and from water.

USSR

UDC 616.981.455-022.35
(282.2)

ADAMOVICH, V. L., Section of Medical Geography, Bryansk Division, Geographic
~~Society, Academy~~ of Sciences USSR

"The Structure of Natural Foci of Tularemia in the Floodplain of Small and
Medium-Sized Rivers. I. Dislocation of Elementary Tularemia Foci in the
Valley of the Desna River"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, Apr 71,
pp 31-36

Abstract: Studies conducted from 1963 to 1970 indicated that the site of the
primary natural focus of tularemia in the Desna valley in the Bryansk area
is not in the floodplain, but in the wooded terraces above the floodplain.
Infestation of *Arvicola terrestris* and other rodents with *Ixodes* ticks (*I.*
apronophorus, *I. trianguliceps*, *I. ricinus*, and *D. pictus*) which carry the
infection cannot take place in the floodplain, where these ticks are absent,
but only in the wooded terraces. Human infection in the floodplain takes place
when *Arvicola terrestris* and possibly also other rodents migrate into this
area. During the mass propagation of *Arvicola terrestris* in the summer, when
there are large numbers of flying, blood-sucking insects, favorable conditions
1/2

USSR

UDC 595.775

ADAMOVICH, V. L., Bryansk Department, Geographical Society, Academy of Sciences USSR

"Fleas of Small Animals in the Volyn Polesie of the Ukraine"

Leningrad, Parazitologiya, No 5, 1971, pp 417-418

Abstract: A total of 2,050 fleas (21 species) were collected in the Volyn region of the Ukraine between 1956 and 1964 from 2,370 small mammals and from 25 rodent nests. The most abundant species were *Ctenophthalmus agyrtes*, *Ct. assimilis*, *Ct. uncinatus*, *Ceratophyllus turbidus*, *C. walkeri*, *Leptopsylla silvatica*, *L. bidentata*, *Palaeopsylla similis*, and *P. sorecis*. Study of the seasonal dynamics of infestation of the animals showed that each flea species has its own specific periods of activity. A list at the end of the report notes the month and place (forest, field, animal burrow) of peak activity of the different species.

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USSR

ADAMOVICH, V. L., Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 108-112

are conditions conducive to the "spillover" of tularemia into the floodplain proper and outbreak of a typical epizootic.

2/2

Epidemiology

USSR

UDC 616.981.455-036.22(282.6)

ADAMOVICH, V. L., Medical Geography Commission, Bryansk Section, Geographical Society, USSR Academy of Sciences

"Structure of Natural Foci of Tularemia on Floodplains of Small and Medium-Sized Rivers. II. Epizootiological Nature of Elementary Foci"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 10, 1971, pp 108-112

Abstract: The patterns of development of the epizootic process established for the floodplains of large rivers cannot be applied to the floodplain of the Desna River (about 550 miles long in southwest Soviet Russia), where outbreaks of tularemia are unrelated to the level and duration of floods or to the water rat population. Some of the elementary foci occurring on terraces above the Desna floodplain are of the forest type, while others are of the stream type. Among the ticks found in this region are Ixodes apronophorus, I. trianguliceps, I. ricinus, and Dermacentor pictus. The epizootiological nature of the foci is determined primarily by the total elements of the biocenosis. Only in years when tick infestation coincides with large numbers of animals highly sensitive to tularemia and with weather favorable to the sustained activity of flying blood-sucking insects (horseflies and mosquitoes)

1/2

USSR

UDC 616.981.455-036.21(470.333)

ADAMOVICH, V. L., Commission for Medical Geography, Bryansk Branch, Geographic Society, Academy of Sciences USSR

"Structural Studies on Natural Tularemia Foci in the Basins of Small and Medium Rivers. IV. Territorial Distribution of Natural Tularemia Foci in Bryanskaya Oblast"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 4, 1973, pp 149-150

Abstract: Bryanskaya Oblast has two autonomous tularemia foci -- Desninskiy and Polesskiy -- and two transitional foci (Karachevskiy and Sevskiy). The Desninskiy focus consists of 4 subfoci: Rzhanitsko-Zhukovskiy, Sudost'-Rozhokskiy, Bryansko-Vygonichskiy, and Trubchevsko-Nerusskiy. The first 2 subfoci are relatively inert, while the last two are characterized by constant presence of epizootic disease and human infections. The Polesskiy autonomous focus consists of 5 subfoci: Snovskiy (highest incidence of epizootic disease), Novozybkovsko-Iput'yevskiy, Surazhsko-Iput'yevskiy, Unechskiy, and Kletnyensko-Iput'yevskiy. In view of the fact that many dikes are being constructed in the Bryanskaya Oblast and that a number of these involve the foci in question, careful studies must be made of biocenologic factors, and cooperation between the engineers and epidemiologists is a prerequisite for the prevention of tularemia among the inhabitants.

1/1

USSR

UDC 669.34:539.70

ADAMOVICH, V. K., Central Boiler-Turbine Institute imeni I. P. Polzhanov

"Kinetics of the Deformation Changes of Nickel-Base Heat-Resistant Alloys"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 3, 1973, pp 572-576

Abstract: Deformability changes of nickel alloys were studied in the presence of a deformation rate of $3.7 \cdot 10^6 - 8 \cdot 10^{-2}\%$ per hour at temperatures from 600 to 1350°C. Following heat treatment, observations were made of the precipitation of particles of the γ' phase on grains, and of the same particles and carbides along grain boundaries. The growth of grains was to ~ 0.2 mm. The dependence of the yield point, yield strength, and relative elongation on temperature at different deformation rates was complex. Six temperature intervals and deformation rates with their peculiar deformation mechanisms were distinguished. Analytical data on these six intervals are presented in detail with emphasis on dynamic deformation aging, intergranular slip, structural changes, values of stresses, vacancies, and fusion of grain boundaries.

1/1

APC046651

INTERNAT. AEROSPACE ABST 5-70 UR 3663

A70-25291 # Force dependence of the plasticity of heat-resistant materials (Silovaya zavisimost' plastichnosti zharoprocknykh materialov). V. K. Adamovich (Tsentral'nyi Nauchno-Issledovatel'skii i Proektno-Konstruktorskii Kotloturbinnnyi Institut, Leningrad, USSR). *Problemy Prochnosti*, vo. 2, Feb. 1970, p. 18-20. 6 refs. In Russian.

Study of heat-resistant austenitic alloys which differ considerably, owing to alloying or heat treatment, with respect to the value of the offset yield point on a horizontal section of the temperature dependence of this yield point. It is shown that under short-term overloads austenitic heat-resistant materials exhibit a greater tendency to brittle failure than pearlite steels. A.B.K.

REEL/FAME
19781964

18

USSR

UDC 539.4.014.2

ADAMOVICH, V. K. Leningrad

"Static and Dynamic Strain-Aging of EI-612 Steel"

Moscow, Fizika i Khimiya Obrabotki Materialov, No 5, Sep-Oct 70,
pp 153-155

Abstract: The author studied static and dynamic strain-aging of EI-612 steel, containing (in percentages) 0.05 C, 0.26 Si, 1.43 Mn, 15.2 Cr, 37.7 Ni, 1.35 Ti, 0.17 Al, 3.0 W, 0.014 S, 0.014 P, 0.02 B. It was found that there is static strain-aging of EI-612 steel at 150-700° C, accompanied by changes in the linear dimensions. The temperature regions for static strain-aging can be divided into two stages, viz. low-temperature (minimum at 300° C) and high-temperature (minimum at 450-550° C). The effect is most pronounced at 400-600° C. An analysis of the temperature dependence of the strengthening coefficient of EI-612 steel indicates that dynamic strain-aging takes place during high-temperature straining. There is no decrease in plasticity as a result of the static or dynamic strain-aging.

1/1

- 60 -

ADAMOVICH, V.K.

PROBLEM OF EXTRAPOLATING STRESS-RUPTURE TEST RESULTS

UDC 539.4

Article by V. K. Adamovich, Yu. B. Dudaikin, Leningrad, Moscow, Central Scientific Research Institute of Machine Building and Turbine Institute (IIMT), Polzunov, Central Scientific Research Institute of Machine Building Technology, Kiev, Problemy Prochnosti, Moscow, No. 4, 1972, submitted 6 May 1971, pp. 32-36

The stress-rupture strength is one of the basic characteristics of heat-resistant materials. The main difficulty in determining stress-rupture strength consists in the necessity for extrapolating the stress-rupture strength test results to the service life, as a rule, exceeding the duration of the laboratory tests by an order. Reliable prediction of the high-temperature strength of steel and alloys is complicated by the complex nonmonotonic variation of their strength, plasticity and structure and the variety of mechanisms of deformation and rupture as a function of temperature and time which are confirmed by the results of testing heat-resistant materials in a wide temperature-time interval (the test time and temperature are 10^3 sec to 10^4 hours and 20-1400° C respectively [1-6]).

Based on an analysis of the results of the above-indicated studies made by one of the authors of this paper and an investigation of numerous extrapolation techniques [6], in reference [5] a generalized parametric extrapolation technique was proposed for the implementation of which it is necessary to test the steel and alloy not only for operational but also for higher temperatures in order to obtain information about the processes determining the high-temperature strength of the material during the operating service life.

The generalized parametric method is based on the relations

$$\sigma = f(t, T, \sigma_{(0)}),$$

$$b(t) = G(\sigma)T^m, \quad m = \text{const}$$

where T is temperature, K ; t is the time before rupture; σ and b are constants, and the value of $b(t)$ proportional to the provisional energy of activation of the rupture $[Q(t)]$ determining the slope of the $\sigma = \text{const}$ lines in the coordinates $\lg t - 1/T$ is used as the basic parameter.

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ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE CONSTRUCTION AND THE COOLING
SYSTEM ARE DESCRIBED OF A CRYOSTAT WHICH CAN COOL THE CRYSTAL AND THE
PHOTOMULTIPLIER SIMULTANEOUSLY TO A GIVEN TEMP. FROM PLUS 25 TO MINUS
196DEGREES. THIS TEMP. CAN BE MAINTAINED WITH AN ACCURACY OF PLUS OR
MINUS 0.2DEGREES.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHOTOPRODUCTION OF CHARGED PIONS IN THE NEAR THRESHOLD REGION OF THE PHOTON ENERGY IS INVESTIGATED THEORETICALLY. THE AMPLITUDE AND THE CROSS SECTION OF PHOTOPRODUCTION OF PIONS ON N AND THE AMPLITUDE AND THE DIFFERENTIAL CROSS SECTION FOR PI POSITIVE ON P ARE CALCD. THE RESULTS ARE COMPARED WITH EXPTL. DATA.
FACILITY: FIZ. INST. IM. LEBEDEV, MOSCOW, USSR.

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TITLE--ANALYSIS OF NEAR THRESHOLD PHOTOPRODUCTION OF CHARGED PIONS BASED
ON DISPERSION RELATIONS -U-
AUTHOR-(05)-ADAMOVICH, M.I., LARIONOVA, V.G., LEBEDEV, A.I., KHARLAMOV,
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8581 (CERN-Trans-68-14) PHENOMENOLOGICAL ANALYSIS OF PHOTOPRODUCTION OF CHARGED PIONS ON NUCLEONS IN RANGE OF ENERGIES NEAR THRESHOLD.

Adamovich, M. I.; Larionova, V. G.; Kharlamov, S. P.; Yagudina,

F. R. (Akademiya Nauk SSSR, Moscow, Institut Fiziki). Translated by F. Quanquin (CERN, Geneva, Switzerland), from Preprint No. 108. 24p. (In French). Dep. CFSTI (U. S. Sales Only).

Starting from experimental data, the energy dependence of the electric dipole amplitude E_0 and the combination of the amplitudes of the waves $P\Delta = (M_1^+ - M_1^- + 3E_1^+)$ for the mesons (π^+) and (π^-) are determined. The isotopic components $E_0^{(0)}$, $E_0^{(\pm)}$, $\Delta^{(0)}$, $\Delta^{(\pm)}$ are obtained. Experiments on linearly polarized photons allow the determination of the value $(2M_{1+} + M_{1-})$ for two values of the photon energy $E_\gamma = 210$ and 225 MeV. From the threshold values of the amplitudes $E_0(\pi^+)$ and $E_0(\pi^-)$ estimates are derived for the πN interaction constant and for the difference of πN scattering lengths S in the isotopic spin $\frac{1}{2}$ or $\frac{3}{2}$ states. These latter results are examined in conjunction with the estimates obtained from πN scattering. (tr-auth)

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ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. MAXIMAL PHOTOINDUCED ABSORBANCE CHANGES OF CYTOCHROMES AT 420 NM ARE OBSERVED IN RHODOSPIRA RUBRA CELLS CULTIVATED UNDER ILLUMINATION OF LOW LIGHT INTENSITIES (10 PRIME3 ERG-CM PRIME2 SEC) AND AT THE LOGARITHMIC GROWTH PHASE. IN THE AGED CELLS THE AMPLITUDE OF A SIGNAL IS LOWER AND THIS EFFECT IS ACCOMPANIED BY CHANGES IN THE KINETICS OF CYTOCHROME REACTIONS: UNDER AEROBIC CONDITIONS NO ABSORBANCE CHANGES ARE OBSERVED WHILE IN DEAERATED SUSPENSION THE FAST PHASE OF CYTOCHROME REDUCTION IS ABSENT. THE ADMINISTRATION OF ACETATE OR SULPHIDE RESULTS IN COMPLETE RESTORATION OF BOTH ANAEROBIC AND AEROBIC PHOTOINDUCED CHANGES OF CYTOCHROMES. IT SHOWS DEEP CONNECTIONS BETWEEN PRIMARY PHOTOSYNTHETIC REACTIONS AND PHYSIOLOGICAL STATE OF THE PURPLE BACTERIA CELLS.

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